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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Application Number: 09/546,227

Filing Date: April 10, 2000

Appellant(s): KOIKE ET AL.

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Chris Comuntzis  
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/2/05 appealing  
from the Office action mailed 8/25/04.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,716,899	GUILE	2-1998
5,607,885	Ichii	3-1997
5,346,722	Beauseigneur	9-1994
4,189,405	Knapton	2-1980
5,489,865	Abe	8-1995

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

A. Claims 73, 76-77, and 80-83 are rejected under 35 U.S.C. 102(b) as anticipated by Guile et al. US 5,716,899.

Regarding claim 73, Guile '899 discloses catalyst comprising a pore-impregnated ceramic body (see abstract).

Regarding claim 80, Guile '899 discloses cordierite, Si, and Al (see column 3, lines 27-38 and 46).

Regarding claims 76-77, 81-83 Guile '899 discloses vanadium oxide and copper filling the pores (see column 7, lines 44-48) and ceria (see column 3, lines 27-38).

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B. Claims 73, 76-86, 97, and 102 are rejected under 35

U.S.C. 103(a) as being unpatentable over Ichii in view of

Beauseigneur et al. 5,346,722.

Regarding claims 73 and 77-86, Ichii '885 discloses cordierite honeycomb (see column 3, lines 43-47) with a lattice defect with oxygen vacancies and oxygen storing capability (see column 1, lines 63-66; the term "capability" indicating oxygen may or may not be stored), a composition of more than 48% by weight (see column 5, lines 29-30), and a honeycomb catalyst carrier without a coating (see column 1, lines 17-19), heating to form microcracks, and reheating (see column 4, lines 60-67).

Ichii '885 fails to specifically disclose ceria, catalytic metals, and pore size of 100 nm or less.

Beauseigneur '722 discloses ceria (see abstract), transition metals (see column 6, line 29 and column 7, lines 65-68), and pore size of less than 5 microns (see column 3, lines 67-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the pore diameter, ceria, and metals of Beauseigneur in the honeycomb cordierite of Ichii because Beauseigneur discloses his ceria as particularly preferred (see column 6, lines 54-55), in a method of improving thermal shock resistance (title), in a honeycomb cordierite (see

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column 1, lines 5-24), to support catalyst metals for use as catalyst (see column 7, lines 65-68).

Regarding claims 76-86, Beauseigneur '722 discloses pore diameter less than 5 microns (see column 3, lines 67-68) and catalyst metals (see column 7, lines 65-68), including noble metals (see column 8, lines 65-66).

Regarding claim 77, it is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Pt as a catalyst metal in view of Applicant's admission that such catalysts are "widely used" and "conventional" (see specification, page 1, second full paragraph).

Regarding claim 78, it is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to use pores of 0-50 microns because Ichii discloses microcracks on particles of 50 microns, which disappear (see abstract and column 8, lines 52-55).

Regarding claim 97, Ichii discloses mixing and pouring, both of which would cause vibration in a liquid.

Regarding claim 102, Ichii discloses  $2\text{MgO}\cdot 2\text{AlO}_3\cdot 5\text{SiO}_2$  (see column 5, line 29).

C. Claims 94, 96, and 98-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichii '885 as applied

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to claim 73 above, and further in view of Knapton et al.

4,189,405.

Regarding claim 94, Ichii fails to discloses CVD or PVD.

Knapton '405 discloses chemical vapour deposition (see column 5, lines 11-19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the CVD of Knapton in the catalyst of Ichii because Knapton discloses the CVD in an intermetallic catalyst (title) to form an alumina layer on alloys which do not contain sufficient aluminum to form their own alumina layer (see column 5, lines 11-14) and to give the requisite compound (see column 2, lines 48-51).

Regarding claim 96, Knapton discloses water or an organic solvent (see column 2, lines 56-58), which would obviously, to one of ordinary skill, include organic solvents that have a higher surface tension than water.

Regarding claims 98-99, Knapton discloses impregnation by heating a mixture of chemicals to produce the catalyst (see column 2, lines 40-47).

D. Claim 95 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichii '885 as applied to claim 73 above, and further in view of Abe et al. 5,489,865.

Regarding claim 95, Ichii fails to disclose supercritical conditions.

Regarding claim 95, Abe '865 discloses drying gel under supercritical condition (see column 3, lines 48-50).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the supercritical conditions of Abe in the catalyst process of Ichii because Abe discloses the supercritical conditions in a catalyst process (title) to obtain a noble metal-dispersed alumina precursor sol or gel (see column 3, lines 47-48).

E. Claims 74-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guile '899.

Guile discloses 0.6% Pt metal.

Guile fails to disclose an average distance between particles of 0.1-100 nm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select an average distance between particles of 0.1-100 nm in the catalyst of Guile because Guile discloses an average support particle diameter of 2-6 microns (see column 6, lines 13-17), which would obviously, to one of ordinary skill, suggest an average distance of 0.1-100 nm since it is within a range that smaller than the

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diameter and greater than the disclosed pore size of 2-15 angstroms.

**(10) Response to Argument**

It is argued that in the prior art, a catalyst component is supported... the honeycomb body. This is not persuasive because Guile '899 discloses catalyst comprising a pore-impregnated ceramic body (see abstract).

It is argued that claim 73 clearly recites that a catalyst component is directly supported within... the ceramic support. This is not persuasive because This is not persuasive because Applicant appears to admit that Guile '899 discloses a pore impregnated ceramic body. Guile specifically discloses the active material to be impregnated in the pores may be a catalytic material (see Guile column 5, lines 10-11).

It is argued that Guile et al. discloses its catalytic material as a catalyst metal or catalyst metal oxide dispersed on an active material such as activated carbon or zeolite. This is not persuasive because Applicant appears to admit that Guile '899 discloses a pore impregnated ceramic body. Guile specifically discloses the active material to be impregnated in the pores may be a catalytic material (see Guile column 5, lines 10-11).

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It is argued that the Examiner states that "Guile '899... ceramic body (see abstract)." This is not persuasive because Applicant appears to admit that Guile discloses both 1) that the pores of the ceramic body are impregnated with active material and 2) that the active material may be a catalytic material.

It is argued that at page 7 of the final Office Action... supported on the substrate. This is not persuasive because the claim reads on the prior art disclosure of a pore-impregnated ceramic body wherein the active material to be impregnated may be a catalytic material.

It is argued that in rejecting claim 80, the Examiner alleges... (see column 3, lines 27-38 and 46). This is not persuasive because Applicant appears to admit that Guile discloses cordierite as ceramic substrate material. Guile further discloses that the pore impregnated ceramic material is ion exchanged (see Guile, Examples 13-20), upon which disclosure the claimed "replaced by a metal having catalyst activity," reads.

It is argued that the Examiner has ignored the express claim language... replaced by a metal having catalyst activity. This is not persuasive because Guile further discloses that the pore impregnated ceramic material is ion exchanged (see Guile,

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Examples 13-20), upon which disclosure the claimed "replaced by a metal having catalyst activity," reads.

It is argued that However, from the above it is clear that while Guile et al. discloses cordierite... in claim 80. This is not persuasive because Guile further discloses that the pore impregnated ceramic material is ion exchanged (see Guile, Examples 13-20), upon which disclosure the claimed "replaced by a metal having catalyst activity," reads.

It is argued that the Examiner states "regarding claims 76-77, 81-83... (see column 3, line 27-38)." This is not persuasive because Applicant appears to admit that Cu is disclosed, upon which disclosure Applicant's recitation of "copper" reads. Applicant is correct ceria is not disclosed at column 3. Ceria is disclosed at column 7, lines 22-25.

It is argued that the Examiner alleges that Guile et al. discloses 0.6% Pt metal. This is not persuasive because Applicant appears to admit that the disclosure is made.

It is argued that the Examiner admits that Guile et al. fails... pore size of 2-15 angstroms. This is not persuasive because the Examiner acknowledges that no such disclosure is made and Applicant does not appear to respond to the Examiner's specific reasoning for why the recitation would nonetheless have

been obvious to one of ordinary skill in the art at the time the invention was made.

It is argued that however, col. 1, lines 63-66 of Ichii et al. does not discloses... storing capability at all. This is not persuasive because Applicant does not claim cordierite "without a coating". It is noted that the features upon which applicant relies (i.e., cordierite "without a coating") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Ichii '885 discloses cordierite honeycomb (see column 3, lines 43-47) with a lattice defect with oxygen vacancies and oxygen storing capability (see column 1, lines 63-66; the term "capability" indicating oxygen may or may not be stored), a composition of more than 48% by weight (see column 5, lines 29-30), and a honeycomb catalyst carrier without a coating (see column 1, lines 17-19), heating to form microcracks, and reheating (see column 4, lines 60-67)

It is argued that since Ichii et al. is directed to improvement... a support at all. This is not persuasive because Ichii discloses a honeycomb catalyst carrier (column 1, lines 17-19) and does not disclose a coating.

It is argued that moreover, as Appellant explained in the Amendment... is not necessary. This is not persuasive because Applicant appears to admit that no coating is disclosed and Ichii discloses a honeycomb catalyst carrier (column 1, lines 17-19).

It is argued that also, the abstract of Beauseigneur et al. does not disclose ceria, while col. 6, line 14 mentions ceria. This is not persuasive because Applicant appears to admit that ceria and other claimed limitations are disclosed.

It is argued that however, ceria disclosed at col. 6, lines 54-55... (less than 5  $\mu\text{m}$ ). This is not persuasive because Applicant appears to admit that ceria is disclosed, arguing only that the intended use is a binder. However, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

It is argued that concretely, the improvement of thermal shock... pores is prevented. This is not persuasive because no such "prevention" is disclosed. Rather, Beauseigneur discloses supported catalyst metals for use as catalyst (see column 7, lines 65-68).

It is argued that even if Ichii et al. and Beauseigneur et al. are combined... less than 5  $\mu\text{m}$  pores. This is not persuasive because Beauseigneur discloses supported catalyst metals for use as catalyst (see column 7, lines 65-68) and Applicant's specification does not define "directly" in such a way as to exclude the presence of a washcoat, as Applicant appears to suggest. Thus the claim, read in light of the specification, is met and the catalyst of the prior art is directly supported.

It is argued that moreover, the Examiner's allegations that Beauseigneur... are simply wrong. This is not persuasive because Beauseigneur discloses supported catalyst metals for use as catalyst (see column 7, lines 65-68) and Applicant's specification does not define "directly" in such a way as to exclude the presence of a washcoat, as Applicant appears to suggest. Thus the claim, read in light of the specification, is met and the catalyst of the prior art is directly supported.

It is argued that from the above... a washcoat layer for a catalyst. This is not persuasive because Beauseigneur discloses supported catalyst metals for use as catalyst (see column 7, lines 65-68) and Applicant's specification does not define "directly" in such a way as to exclude the presence of a washcoat, as Applicant appears to suggest. Thus the claim, read

in light of the specification, is met and the catalyst of the prior art is directly supported.

It is argued that in Beauseigneur et al., the entry of a washcoat layer... having thermal shock resistance. This is not persuasive because Applicant appears to admit that a washcoat layer comprising a catalyst component is supported by the disclosed support having the claimed micropore size, arguing only that they are not "directly" supported. However, Beauseigneur discloses supported catalyst metals for use as catalyst (see column 7, lines 65-68) and Applicant's specification does not define "directly" in such a way as to exclude the presence of a washcoat, as Applicant appears to suggest. Thus the claim, read in light of the specification, is met and the catalyst of the prior art is directly supported.

It is argued that in contrast, in Appellants' inventions... with 100 nm or less. This is not persuasive for the reasons above.

It is argued that however, although particles of 50  $\mu\text{m}$  and microcracks are disclosed... supported by the microcracks. This is not persuasive because Applicant appears to admit that 50  $\mu\text{m}$  and microcracks are disclosed and Beauseigneur discloses supported catalyst metals for use as catalyst (see column 7, lines 65-68).

It is argued that more particularly as can be seen in the Abstract... 50 microns or less. This is not persuasive because Applicants alleged deficiency of Ichii is disclosed in Beauseigneur, which discloses pore size of less than 5 microns (see column 3, lines 67-68). One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that nor can any relevant citations from.. claims 80-83, 85, 86, and 102. This is not persuasive for the reasons above.

It is argued that in rejecting claim 97, the Examiner alleges that... vibration in a liquid. This is not persuasive because Applicant appears to admit that Ichii discloses pouring a melt in water, which would also cause vibration.

Applicant correctly asserts that claim 103 is allowed.

It is argued that moreover, the Examiner admits that Ichii alone does not invalidate claim 73. This is not persuasive because Knapton is not relied upon for a disclosure of catalyst supporting, which is disclosed by Ichii (Ichii, column 1, lines 17-19). One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of

references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that more particularly, col. 5, lines 11-19 of Knapton... supporting a catalyst component. This is not persuasive because Ichii discloses supporting a catalyst (see above). One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is argued that however, as noted above... form an alumina layer. This is not persuasive because Knapton discloses depositing Pt (abstract).

It is argued that the however, col. 2, lines 56-58 discloses water or organic solvent... solvent at all. This is not persuasive for reasons already of record. The Examiner acknowledges that the specific surface tension is not disclosed but would have been obvious for reasons to which Appellant does not appear to respond.

It is argued that with respect to claims 98 and 99... in these claims. This is not persuasive for reasons already of record. Knapton discloses impregnation by heating a mixture of chemicals to produce the catalyst (see column 2, lines 40-47).

It is argued that however, Ichii et al. does not disclose the catalyst process. This is not persuasive because, as noted above, Applicant does not claim a catalyst wherein no coating layer is present. It is noted that the features upon which applicant relies (i.e., a catalyst wherein no coating layer is present) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Edward M. Johnson

Conferees:

Stanley Silverman

Patrick Ryan



EMJ